

FOREWORD

BRIDGING THE GAP: LINKING RESEARCH, TRAINING, AND SERVICE DELIVERY TO REDUCE THE MALARIA BURDEN IN AFRICA

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I am most pleased to write the foreword to this new collection of important articles in the *American Journal of Tropical Medicine and Hygiene* on the devastating burden of malaria in Africa. The first supplement, "The Intolerable Burden of Malaria: A New Look at the Numbers," published in 2001, was extremely popular and useful for educating people about the enormity of this scourge and mobilizing resources to battle against it. And I am delighted that the title of this supplement, "The Intolerable Burden of Malaria: II. What's New, What's Needed," and many of the papers focus on linking research and control actions.

Malaria continues to be a major cause of ill-health in Africa south of the Sahara, where it takes its greatest toll on young children and pregnant women. Because malaria is such a common disease and many of those who become sick do not visit health care facilities, assessing the magnitude and changing patterns of the problem over time is an enormous challenge. About 90% of all malaria deaths in the world today occur in sub-Saharan Africa, where the most virulent species of the parasite (*Plasmodium falciparum*) flourishes. Most people at risk of the disease live in areas of relatively intense and stable transmission. Malaria impacts negatively on the health systems and on the economy of local communities and households, particularly in resource-poor settings. It keeps adults from earning a living, drains the economies of African nations, and traps their people in grinding poverty. Fortunately, new opportunities have recently arisen aimed at mobilizing more resources to fight malaria in Africa. Most notably among these are the launching of the Multi-lateral Initiative on Malaria (MIM) in 1997, Roll Back Malaria (RBM) in 1998, and the Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM) in 2001. The financial resources to fight malaria are increasing globally and at country level.

In the field of science, the enormous power of modern biology and technology has enabled the sequencing of the mosquito and malaria genomes. We now have the master plans for humans, *Plasmodium*, and the *Anopheles* mosquito. This has opened new fields of vision and expanded work opportunities. Detailed knowledge of these genomes will eventually lead to new drugs, will certainly have an impact on the development of a vaccine against malaria, and will encourage identification of new and better ways of interrupting transmission of malaria. African scientists have key roles to play, in collaboration with their colleagues from the north and, most importantly, by a south-south collaboration.

Translating the outcomes of research into practical knowledge for control and effective delivery of interventions to at-risk populations has proven to be a great challenge to public health systems of malarious areas within and outside Africa. If major reductions in malaria mortality and morbidity are to occur in Africa, effective mechanisms for bridging the

gap between research, training, and service delivery must be identified, used, and brought to scale. To address this welcome challenge, the World Health Organization Regional Office for Africa (WHO/AFRO) is strengthening collaboration within and outside WHO. The investments in and establishment of links with MIM since 1997 have enabled malaria research capacity to be strengthened considerably in 15 African countries, resulting in improved understanding of malarial ecology, and generation of tools and strategies for improved implementation of control interventions. This results from bringing research and control staffs together at a very early stage in the design and implementation of the research; monitoring and evaluation of drug efficacy, insecticide resistance, bed net use, and health outcomes of investments are key collaborative activities. WHO/AFRO provides technical support to member countries to develop and implement operational research projects in malaria aimed at resolving operational issues encountered in implementation. Collaboration with research institutions within the countries of the region is being strengthened and WHO Collaborating Centers are being designated to strengthen research capability in Africa.

Several experts from African research institutions are working with WHO/AFRO to provide scientific and technical support to countries for program implementation. The results of this simple but effective approach to feed research into implementation (and vice-versa) have been very positive. We have promoted the creation of sub-regional networks for monitoring antimalarial drug resistance, bringing together national malaria control programs, clinicians, managers, and laboratory scientists from research and training institutions and partner agencies to bridge the gap between research and implementation, and facilitate sharing of information and experience among countries. By these actions, the brain drain problem is minimized; we continuously motivate young researchers and implementers by providing them opportunities to update their technical knowledge through meetings, workshops, country support missions, and networking. Our collaboration with the nascent Gates Malaria Partnership at the London School of Hygiene and Tropical Medicine is beginning. This exciting collaboration will be developing malaria training centers in four African countries to carry out capacity building activities based on local priorities for malaria prevention and control using innovative approaches such as distance learning.

In consort with partners, we are committed fully to intensifying our support to countries in the African region by diversifying and expanding the collaborations and giving adequate priority to the needs of malaria-endemic countries. Advancing public health in Africa requires balance between scientific knowledge, experience, and operational expertise, always in support of long-term development for the conti-

nent. Sustained development will only be achieved if today we envision and start building the healthy and malaria-free Africa of tomorrow.

In November 2002, I had the honor to co-chair a remarkably successful symposium on the burden of malaria in Africa sponsored by the MIM and the new Disease Control Priorities in Developing Countries Project. While the presentations indicated that the burden of malaria remains unacceptable, there were many reports on drugs, vector control, social mo-

bilization, and yes, even vaccine trials, to give much hope for control in our lifetime. The malaria burden is better understood; it is now time for intensified actions to control and defeat this peril.

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